Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): A digital matched filter for despreading on reception side a received signal sequence having been spread on transmission side, comprising:

received signal holding means for successively holding a predetermined number of samples among samples constituting said received signal sequence input in time-series manner;

spreading code generating means for generating a spreading code sequence for said despreading; and

correlation value calculating means for calculating a correlation value between said predetermined number of samples held in said received signal holding means and said generated spreading code sequence,

said correlation value calculating means including

first product-sum calculating means for calculating a correlation value between a part of the predetermined number of samples held in said received signal holding means and a part of the generated spreading code sequence corresponding to said part of the predetermined number of samples held in said received signal holding means,

second product-sum calculating means for calculating a correlation value between a remaining part of the predetermined number of samples held in said received signal holding means and a remaining part of the generated spreading code sequence corresponding to said remaining part of the predetermined number of samples held in said received signal holding means, and

decision means for ~~deciding whether~~ <u>comparing</u> the correlation value output from said first product-sum calculating means ~~exceeds~~ <u>with</u> a predetermined threshold value to stop calculation by said second product-sum calculating means when said decision means decides that the correlation value output from said first product-sum calculating means does not exceed said predetermined threshold value.

Claim 2 (Currently Amended): A digital matched filter for despreading on reception side a received signal sequence having been spread on transmission side, comprising:

received signal holding means for successively holding samples constituting said received signal sequence input in time-series manner,

said received signal holding means including

a predetermined number of storage circuits for holding samples of said received signal sequence input in time-series manner in parallel in the same predetermined number as said predetermined number of storage circuits,

logic circuits provided at respective preceding stages of said predetermined number of storage circuits, said logic circuits each activated to pass an input signal to a corresponding one of said predetermined number of storage circuits and mask the input signal otherwise,

first control means for cyclically causing write enable state of said predetermined number of storage circuits at a predetermined timing to cyclically write said samples of the received signal sequence input in time-series manner into said predetermined number of storage circuits at said predetermined timing, and

second control means for cyclically activating said logic circuits at said predetermined timing

to cyclically ~~input~~ pass said samples of the received signal sequence input in time-series manner to said

predetermined number of storage circuits at said predetermined timing; and

said digital matched filter further comprising

spreading code generating means for generating a spreading code sequence for said despreading;

and

correlation value calculating means for calculating a correlation value between said samples of

the received signal sequence input in time-series manner held in parallel in said predetermined number of

storage circuits and said spreading code sequence.

Claim 3 (Currently Amended): The digital matched filter according to claim 2, wherein

said logic circuits each have an input load capacitance smaller than an input load capacitance of

each ~~of said~~ respectively corresponding predetermined ~~number of~~ storage circuits.

Claim 4 (Canceled).

Claim 5 (Currently Amended): A digital matched filter for despreading on

reception side a received signal sequence having been spread on transmission side,

comprising:

received signal holding means for successively holding samples constituting said

received signal sequence input in time-series manner,

said received signal holding means including

a predetermined number of storage circuits for holding samples of said received signal sequence input in time-series manner in parallel in the same predetermined number as said predetermined number of storage circuits,

logic circuits provided at respective preceding stages of said predetermined number of storage circuits, said logic circuits each activated to pass an input signal to a corresponding one of said predetermined number of storage circuits and mask the input signal otherwise,

first control means for cyclically causing write enable state of said predetermined number of storage circuits at a predetermined timing to cyclically write said samples of the received signal sequence input in time-series manner into said predetermined number of storage circuits at said predetermined timing, and

second control means for cyclically activating said logic circuits at said predetermined timing to cyclically ~~input~~ pass said samples of the received signal sequence input in time-series manner to said predetermined number of storage circuits at said predetermined timing; and

said digital matched filter further comprising

spreading code generating means for generating a spreading code sequence for said despreading; and

correlation value calculating means for calculating a correlation value between said samples of the received signal sequence held in parallel in said predetermined number of storage circuits and said spreading code sequence,

said correlation value calculating means including

first product-sum calculating means for calculating a correlation value between a part of the predetermined number of samples held in said predetermined number of storage circuits and a

corresponding part of the generated spreading code sequence ~~spreading codes corresponding to a corresponding part of samples in said generated spreading code sequence~~,

second product-sum calculating means for calculating a correlation value between <u>a remaining part of the predetermined number</u> ~~the rest~~ of samples held in said predetermined number of storage circuits and <u>a remaining part of the generated spreading code sequence</u> ~~spreading codes corresponding to a rest of samples in said generated spreading code sequence~~, and

decision means for ~~deciding whether~~ <u>comparing</u> the correlation value output from said first product-sum calculating means ~~exceeds~~ <u>with</u> a predetermined threshold value to stop calculation by said second product-sum calculating means when said decision means decides that the correlation value output from said first product-sum calculating means does not exceed said predetermined threshold value.

Claim 6 (Currently Amended): The digital matched filter according to claim 5, wherein

said logic circuits each have an input load capacitance smaller than an input load capacitance of each ~~of said~~ respective~~ly~~ corresponding predetermined ~~number of~~ storage circuits.

Claim 7 (Currently Amended): A digital matched filter for despreading on reception side a received signal sequence having been spread on transmission side, comprising:

received signal holding means for successively holding samples constituting said received signal sequence input in time-series manner,

said received signal holding means including

a first predetermined number of storage circuits for holding samples of said received signal sequence input in time-series manner in parallel in the same predetermined number as said first predetermined number of storage circuits, said first predetermined number of storage circuits being

divided into a second predetermined number of groups,

logic circuits provided at respective preceding stages of said first predetermined number of storage circuits, said logic circuits each activated to pass an input signal to a corresponding one of said predetermined number of storage circuits and mask the input signal otherwise,

first control means for cyclically causing write enable state of said first predetermined number of storage circuits at a predetermined timing to cyclically write said samples of the received signal sequence input in time series manner into said first predetermined number of storage circuits at said predetermined timing, and

second control means for cyclically activating said logic circuits at said predetermined timing to cyclically ~~input~~ pass said samples of the received signal sequence input in time series manner to said first predetermined number of storage circuits at said predetermined timing;

said digital matched filter further comprising

spreading code generating means for generating a spreading code sequence for said despreading; and

correlation value calculating means provided respectively corresponding to said second predetermined number of groups each for calculating a correlation value between samples of said received signal sequence input in time-series manner held in ~~of~~ a corresponding one of said second predetermined number of groups and a part of said spreading code sequence,

each of said correlation value calculating means including

first product-sum calculating means for calculating a correlation value between ~~a part of~~ samples held in the storage circuits of ~~the corresponding~~ a first one of said second predetermined number of groups and a corresponding first part of said spreading codes sequence ~~corresponding to a corresponding part of samples in said generated spreading code sequence,~~

second product-sum calculating means for calculating a correlation value between ~~the~~ ~~rest of~~ samples held in ~~said~~ the storage circuits of ~~the corresponding~~ a second one of said second predetermined number of group<u>s</u> and <u>a corresponding second part of said</u> spreading code<u>s</u> sequence ~~corresponding to a rest of samples in said generated spreading code sequence~~, and

decision means for ~~deciding whether~~ <u>comparing</u> the correlation value output from <u>each of</u> said first product-sum calculating means ~~exceeds~~ <u>with</u> a predetermined threshold value to stop calculation by <u>each corresponding</u> said second product-sum calculating means when said decision means decides that the correlation value output from said first product-sum calculating means does not exceed said predetermined threshold value; and

said digital matched filter further comprising

output control means for successively outputting in time-series manner respective correlation values output from respective ones of said correlation value calculating means as correlation values output from one system.

Claim 8 (Currently Amended): The digital matched filter according to claim 7, wherein

said logic circuits each have an input load capacitance smaller than an input load capacitance of each ~~of said~~ respective<u>ly</u> corresponding ~~first~~ predetermined ~~number of~~ storage circuit<u>s</u>.

Claim 9 (Currently Amended): A mobile wireless terminal for digital radio communication comprising

reception-related modem means for demodulating received digital data and

signal processing means for processing a signal received by said reception-related modem means to output the processed signal,

said reception-related modem means including a digital matched filter for despreading on reception side a received signal sequence having been spread on transmission side,

said digital matched filter comprising:

received signal holding means for successively holding a predetermined number of samples among samples constituting said received signal sequence input in time-series manner;

spreading code generating means for generating a spreading code sequence for said despreading; and

correlation value calculating means for calculating a correlation value between said predetermined number of samples held in said received signal holding means and said generated spreading code sequence,

said correlation value calculating means including

first product-sum calculating means for calculating a correlation value between a part of the predetermined number of samples held in said received signal holding means and <u>a</u> <u>corresponding part of the generated</u> spreading codes <u>sequence</u> ~~corresponding to said part of the~~ ~~predetermined number of samples in said generated spreading code sequence~~,

second product-sum calculating means for calculating a correlation value between a remaining <u>part of the predetermined</u> number of samples ~~of the predetermined number of samples~~ held in said received signal holding means and <u>a corresponding remaining part of the generated</u> spreading codes ~~corresponding to said remaining number of samples in said generated spreading code sequence~~, and

decision means for ~~deciding whether~~ <u>comparing</u> the correlation value output from said first product-sum calculating means ~~exceeds~~ <u>with</u> a predetermined threshold value to stop

calculation by said second product-sum calculating means when said decision means decides that the correlation value output from said first product-sum calculating means does not exceed said predetermined threshold value.

Claim 10 (Currently Amended): A mobile wireless terminal for digital radio communication comprising:

reception-related modem means for demodulating received digital data and

signal processing means for processing a signal received by said reception-related modem means to output the processed signal,

said reception-related modem means including a digital matched filter for despreading on reception side a received signal sequence having been spread on transmission side,

said digital matched filter comprising:

received signal holding means for successively holding samples constituting said received signal sequence input in time-series manner,

said received signal holding means including

a predetermined number of storage circuits for holding samples of said received signal sequence input in time-series manner in parallel in the same predetermined number as said predetermined number of storage circuits,

logic circuits provided at respective preceding stages of said predetermined number of storage circuits, said logic circuits each activated to pass an input signal to a corresponding one of said predetermined number of storage circuits and mask the input signal otherwise,

first control means for cyclically causing write enable state of said predetermined number of storage circuits at a predetermined timing to cyclically write said samples of the received

signal sequence input in time-series manner into said predetermined number of storage circuits at said predetermined timing, and

second control means for cyclically activating said logic circuits at said predetermined timing to cyclically ~~input~~ pass said samples of the received signal sequence input in time-series manner to said predetermined number of storage circuits at said predetermined timing; and

said digital matched filter further comprising

spreading code generating means for generating a spreading code sequence for said despreading; and

correlation value calculating means for calculating a correlation value between said samples of the received signal sequence input in time-series manner held in parallel in said predetermined number of storage circuits and said spreading code sequence.

Claim 11 (Currently Amended): The mobile wireless terminal according to claim 10, wherein

said logic circuits each have an input load capacitance smaller than an input load capacitance of each ~~of said~~ respectively corresponding predetermined ~~number of~~ storage circuits.

Claim 12 (Canceled).

Claim 13 (Currently Amended): A mobile wireless terminal for digital radio communication comprising

reception-related modem means for demodulating received digital data and

signal processing means for processing a signal received by said reception-related modem means to output the processed signal,

said reception-related modem means including a digital matched filter for despreading on reception side a received signal sequence having been spread on transmission side,

said digital matched filter comprising:

received signal holding means for successively holding samples constituting said received signal sequence input in time-series manner,

said received signal holding means including

a predetermined number of storage circuits for holding samples of said received signal sequence input in time-series manner in parallel in the same predetermined number as said predetermined number of storage circuits,

logic circuits provided at respective preceding stages of said predetermined number of storage circuits, said logic circuits each activated to pass an input signal to a corresponding one of said predetermined number of storage circuits and mask the input signal otherwise,

first control means for cyclically causing write enable state of said predetermined number of storage circuits at a predetermined timing to cyclically write said samples of the received signal sequence input in time-series manner into said predetermined number of storage circuits at said predetermined timing, and

second control means for cyclically activating said logic circuits at said predetermined timing to cyclically ~~input~~ pass said samples of the received signal sequence input in time-series manner to said predetermined number of storage circuits at said predetermined timing; and

said digital matched filter further comprising

spreading code generating means for generating a spreading code sequence for said despreading;

and

correlation value calculating means for calculating a correlation value between said samples of the received signal sequence held in parallel in said predetermined number of storage circuits and said spreading code sequence,

said correlation value calculating means including

first product-sum calculating means for calculating a correlation value between a part of the predetermined number of samples held in said predetermined number of storage circuits and a corresponding part of the generated spreading code sequence ~~spreading codes corresponding to a corresponding part of samples in said generated spreading code sequence~~,

second product-sum calculating means for calculating a correlation value between a remaining part of the predetermined number ~~the rest~~ of samples held in said predetermined number of storage circuits and a remaining part of the generated spreading code sequence ~~spreading codes corresponding to a rest of samples in said generated spreading code sequence~~, and

decision means for ~~deciding whether~~ comparing the correlation value output from said first product-sum calculating means ~~exceeds~~ with a predetermined threshold value to stop calculation by said second product-sum calculating means when said decision means decides that the correlation value output from said first product-sum calculating means does not exceed said predetermined threshold value.

Claim 14 (Currently Amended): The mobile wireless terminal according to claim 13, wherein said logic circuits each have an input load capacitance smaller than an input load capacitance of each ~~of said~~ respectively corresponding predetermined ~~number of~~ storage circuits.

Claim 15 (Currently Amended):   A mobile wireless terminal for digital radio communication comprising

reception-related modem means for demodulating received digital data and

signal processing means for processing a signal received by said reception-related modem means to output the processed signal,

said reception-related modem means including a digital matched filter for despreading on reception side a received signal sequence having been spread on transmission side,

said digital matched filter comprising:

received signal holding means for successively holding samples constituting said received signal sequence input in time-series manner,

said received signal holding means including

a first predetermined number of storage circuits for holding samples of said received signal sequence input in time-series manner in parallel in the same predetermined number as said predetermined number of storage circuits, said first predetermined number of storage circuits being divided into a second predetermined number of groups,

logic circuits provided at respective preceding stages of said first predetermined number of storage circuits, said logic circuits each activated to pass an input signal to a corresponding one of said predetermined number of storage circuits and mask the input signal otherwise,

first control means for cyclically causing write enable state of said first predetermined number of storage circuits at a predetermined timing to cyclically write said samples of the received signal sequence input in time-series manner into said first predetermined number of storage circuits at said predetermined timing, and

second control means for cyclically activating said logic circuits at said predetermined

timing to cyclically ~~input~~ pass said samples of the received signal sequence input in time-series

manner to said first predetermined number of storage circuits at said predetermined timing;

said digital matched filter further comprising

spreading code generating means for generating a spreading code sequence for said

despreading; and

correlation value calculating means provided respectively corresponding to said second

predetermined number of groups each for calculating a correlation value between samples of said

received signal sequence of a corresponding one of said second predetermined number of groups and a

part of said spreading code sequence,

each of said correlation value calculating means including

first product-sum calculating means for calculating a correlation value between ~~a part of~~

samples held in the storage circuits of ~~the corresponding~~ a first one of said second predetermined

number of groups and a corresponding first part of said spreading codes sequence ~~corresponding~~

~~to a corresponding part of samples in said generated spreading code sequence,~~

second product-sum calculating means for calculating a correlation value between ~~the~~

~~rest of~~ samples held in ~~said~~ the storage circuits of ~~the corresponding~~ a second one of said second

predetermined number of groups and a corresponding second part of said spreading codes sequence

~~corresponding to a rest of samples in said generated spreading code sequence,~~ and

decision means for ~~deciding whether~~ comparing the correlation value output from said

first product-sum calculating means ~~exceeds~~ with a predetermined threshold value to stop

calculation by said second product-sum calculating means when said decision means decides that

the correlation value output from said first product-sum calculating means does not exceed said predetermined threshold value; and

said digital matched filter further comprising

output control means for successively outputting in time-series manner respective correlation values output from respective ones of said correlation value calculating means as correlation values output from one system.

Claim 16 (Currently Amended): The mobile wireless terminal according to claim 15, wherein

said logic circuits each have an input load capacitance smaller than an input load capacitance of each ~~of said~~ respectively corresponding ~~first~~ predetermined ~~number of~~ storage circuits.